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ABSTRACT

A study examined the attitudes of employers from 10 firms in northwest Arkansas toward changing from a traditional office to an electronic one. Even though the 10 employers represented 7 different categories of industry (construction, manufacturing, transportation and public utilities, wholesale and retail trade, finance and real estate, services, and government), their responses to the 20-item questionnaire were quite similar to one another. All of the employers had had experience in the electronic office and therefore all could relate to the resulting changes in people, equipment, procedures, and attitudes. The 10 respondents agreed that the electronic office is capable of requiring less time to do a certain task with the least amount of expense, thereby being more cost-efficient than the traditional office. The majority of respondents felt that the electronic office will demand greater efficiency in the language arts, and most felt that the person who is not computer literate by the end of the decade will be at a disadvantage. (The survey instrument is appended to this report.) (MN)

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A Study to Determine the Perception of Business Persons on Changing From A Traditional Office to the Electronic Office

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

A Study to Determine the Perception of
Business Persons on Changing From a
Traditional Office to the Electronic Office

While the traditional office with the boss and the secretary has served society well, those days are in the past. We might as well go ahead and write the obituary for the "late great traditional office." A new member of society has emerged--the electronic office. The electronic office employs word processing by the use of a typewriter, mostly electric, but it extends well beyond that. This electronic era also encompasses the memory typewriter, word processor, and the microcomputer with word processor capabilities. While the electronic office will serve our Hi-Tech society more efficiently, the demands will also be greater. More skill will be required to operate the hardware and software, the cost will be a factor, and retraining will be time-consuming. Of course, there are advantages and disadvantages to any innovation. Office management has been currently facing the pressure of changing existing hardware, purchasing new hardware, up-dating training skills, the lagging economy and resulting morale, and greater accountability of nonproductive time. The following questions were investigated to facilitate the change from the traditional office to the electronic office.

1. Will the employer investigate the differences existing between the traditional office and the electronic office?

2. Will the employer explore the various duties existing between the secretaries in the traditional office and the electronic office?
3. Will the employer count the cost of the nonproductive time between the traditional office and the electronic office?
4. Will the employer investigate the levels of skill required in the training of the more skillful jobs in the electronic office?
5. Will the employer give an accounting of the time and cost differences between the traditional office and the electronic office?
6. Will the employer weigh the advantages and disadvantages of each of these, the standard typewriter, the electric typewriter, the memory typewriter, word processor, and the microcomputer with word processor capabilities?
7. Will the employer see a need for the above innovations? Based upon this need, will the employer make an objective decision to reach out and accept the challenge that this Hi-Tech society is demanding?

Purpose of the Study

The purpose of this study was to construct an instrument which would determine the attitudes which selected business employers have toward the changing role of the office from the traditional office to the electronic office.

Objectives

Given a job analysis instrument of the changing role of the office from the traditional office to the electronic office, the employer was asked to

1. Evaluate the various job profiles existing between the traditional office and the electronic office.
2. Categorize the many duties of the secretaries in the traditional office and the electronic office.
3. Take an accounting of the amount of nonproductive time between the traditional office and the electronic office.
4. Differentiate between differences in the training required for secretaries in the traditional office and the electronic office.
5. Evaluate the time/cost factor between the traditional office and the electronic office.
6. Weigh the advantages and disadvantages of the standard typewriter, the electric typewriter, the memory typewriter, word processor, and the microcomputer with word processor capabilities.
7. Demonstrate the need for word processor and electronic equipment in the electronic office for greater efficiency.

Plan of Action

A review of the literature relative to the traditional office and the electronic office was conducted to give a complete scenario of each office setting. The traditional

office and the electronic office were to be put in the proper perspective so that an employer could make sound judgments based on the review of the literature.

A comprehensive instrument was administered to selected business firms in Northwest Arkansas. Seven predominant types of industry were identified for study:

1. Construction
2. Manufacturing
3. Transportation and Public Utilities
4. Wholesale and Retail Trade
5. Finance, Insurance and Real Estate
6. Services
7. Government

Ten business firms were selected with representation from each of the seven groups whether or not they had demonstrated progressive innovations from the traditional office to the electronic office.

Revisions of the instrument were made as necessary in order to get the proper results. The results were then tabulated. Those findings, conclusions, and recommendations were incorporated into the final report.

Review of the Literature

Governor Edmund G. Brown offered us a challenge when he stated that computer education is very important to prepare students for the new technological workplace. (Brown, p. 99) An editorial comment in The Balance Sheet stated that in just one factory a microcomputer is completed every 27 seconds! Startling! Mr. Fox warned that we not forget the basics of spelling, composing, communicating, and, of course, proper attitudes. He also stated that we should "educate the person as a whole." (Fox, p.2)

The proper program in the schools to teach a computer literacy course seems to be the business education department. Many of the secondary students will receive a terminal education and will go directly into the job market. They will need computer skills to get a job, to keep a job, to be more promotable and more employable. (Peterson, p.13)

The urgency for business educators to teach computer literacy in business education departments has been underscored by the NBEA Task Force on Computer Literacy in its preliminary report to the National Business Education Association (NBEA) Executive Board. The NBEA Task Force report emphasized the "need for business educators to take the lead in providing computer literacy instruction for all students in order to prepare them for effective participation in an information-oriented society." (Panagoplos, p. 33)

Being computer illiterate is compared to being physically handicapped. ~~Stude will~~ need to be able to "speak" the computer languages or they will be handicapped. According to an organization known as Trends, computer illiteracy "is the biggest problem facing our nation in the 1980's." (Curley, p. 15) Business educators need to seize this opportunity to initiate computers into their curriculum.

Microcomputers may be employed to teach simulations in accounting, economics, and marketing and distribution. Drill and practice exercises may be used for typing, shorthand, and language arts skills. A tutorial exercise may be used to teach accounting. Many creative ways may be devised to teach business education subjects in the classroom. However a teacher would like to use new technology, microcomputers belong in the classroom and have definite individualized or group learning features. (Muscat, p. 10)

Along with this high technology, our "paperless" society, our "cashless" society, and the merging of data processing and word processing into information processing have come the need for greater attention to specific skills that the secretary needs to acquire. People in industry and the work force maintain that the number one skill required of secretaries will be the "ability to communicate, in written and in verbal form." (Modlin, p. 4) Communications accuracy has been prompted by the fact that "a written message may now be received halfway around the world in less than 30 seconds." (Goodrich, p. 8)

The number two basic requirement that business has dictated is keyboarding. Presently there are 60 percent of the work force employed in information processing. It is estimated that by 1990 80 percent of the work force will be employed in information processing. (Modlin, p. 4) Not "having to rekeyboard material stresses the significance of accurate original input." (Goodrich, p. 8)

Typing skills play an important role in this new era. Entry-level requires a minimum of 60 words a minute. In the information processing age, "this 60 words a minute should be virtually error-free." (Modlin, p. 4)

Much of the current literature states that shorthand is dying, that it is becoming obsolete. A reversal of this thinking pattern may be true in the information processing age. Shorthand skills provide the secretary with greater "success on the job" and greater depth of "language arts skills." Entry-level requires a minimum of 80 words a minute. (Modlin, p. 4)

Typing and non-typing competencies have demanded a great deal of attention in the information processing age. The typing competencies needed to prepare students for success in the electronic office include straight-copy typing skills and production typing skills. The non-typing competencies are defined as "proofreading skills, English skills, and decision-making skills, encompassing setting priorities, following directions, and using reference sources." (Ober, p. 10)

An instructional cone of typing competencies has been devised. The base of the cone starts with copying straight copy material. Above the copying stage in a natural progression is arranging of material and typing it into a mailable copy. The next stage that takes more judgment is editing of material. A higher level of thinking exists in the creating of material. The apex of the cone is the problem-solving stage which requires decision-making skills. (Perkins, p. 30)

With the new technology in mind, it may seem questionable to learn to type accurately. The new technology makes it quick and easy to correct errors, but the correction of errors is very time consuming and costly. An executive director of a research organization which specializes in office technology stated that "the cost of operations in today's office is rising faster than any other segment of business--about 12 to 15 percent a year--and these costs will double over the next six years. But there has not been a comparable increase in office productivity." (Rubin, p. 12)

Lack of office productivity has produced some comments. A problem-solving consultant stated that "90 percent of the material coming from the word processing center had to be retyped." (Rubin, p. 12) A manager of a word processing center stated that "The absence of good typing skills is one of the major problems in any word processing center. Typewriting accuracy is absolutely essential, because manipulating the

memory (making corrections on a memory typewriter) is time-consuming and very costly." (Rubin, p. 12) The supervisor of an information processing center states, "The typist in the modern office must maintain an even higher level of expertise to function efficiently. More errors are 'falling through the cracks' and getting into the copy, and more time is spent proofreading." (Rubin, p. 31) These comments seem to be the universal opinion. Error corrections are quick and easy to make but the correction cycle is time consuming and very costly. An implication from these comments would be to insist on typing accuracy. The secretary who maintains greater typing accuracy would be the one to receive greater employment promotions.

As has been stated earlier, the new technological age has instigated many changes, among those are the changing role of the secretary and the adaption of the secretary to the "new tasks demanded by the rapidly changing business environment." (Kusumoto, p. 6) In a survey conducted by the Minolta Corporation's Business Equipment Division in cooperation with Professional Secretaries International (PSI), we find one important implication for classroom educators, "one-fourth of the secretaries responding have supervisory responsibility for one or more people. The percentage increases to about one-third for secretaries employed with small and medium companies and for those secretaries over 45 years old." (Kusumoto, p. 6) Some supervision principles that need to be stressed in the classroom include recruiting subordinates, orienting subordinates, and

evaluating subordinates." (Henr ngton, p. 27-29) Business educators have a tremendous responsibility to provide the proper balance in educating secretaries for the office of tomorrow.

The revolution of the traditional office to the electronic office has come about partly because of word processing. Teachers are faced with the challenge of "meeting both the needs of the traditional office and the automated office, while preparing for continuous renovation of the curriculum to keep pace with the business world." (Moody and Matthews, p. 63) Keeping pace with the business world can be done without expensive word processing equipment. Hal Glatzer, in his Introduction to Word Processing, stated that most computer terminals are not built to accommodate the many editing functions; therefore, the computer operator has to memorize an assortment of commands to accomplish the job. These competencies and skills may be taught in business education courses so that students may be better prepared to enter the world of business. (Casady, p. 57)

Since the number one skill required of secretaries is communication, there are many skills that can be taught to students to improve their communication skills. It is only fitting that special attention should be placed on word processing skills. The following are some skills that can be taught to students without having expensive equipment:

1. Students should be taught language arts skills, grammar, spelling, punctuation, capitalization, and vocabulary.

2. Students should be able to transcribe a variety of business documents, as insurance and real estate forms.
3. Students should become familiar with all letter styles.
4. Students should be taught supervisory and administrative skills.
5. Students should be able to type accurately on different typewriters.
6. Students should be given practice in records management.
7. Students should be exposed to word processing terminology, equipment, and systems.
8. Students should be given ample opportunity to engage in non-typing skills, as proofreading.
9. Students should be prepared to interrelate with others and have refined human relations skills. (Moody and Matthews, p. 63)

Educators are facing many changes in the business education curriculum. People have a tendency to resist change. In order for today's students to be prepared for the office of tomorrow, we need to become alert to these changes and pursue a plan of action to accomplish this challenge. (Kozlowski, p. 52)

Teachers need to strive to exhibit a good example before their students. At the same time a teacher teaches a course, the teacher always learns something new. This remains true for the word processing concepts course. A field trip to a word processing center and a visit by a local vendor would provide

extra knowledge and expertise so that a teacher could share with future classes. (Bennett, p. 7)

President John F. Kennedy gave us a prediction and food for thought when he said: "We must educate people today for a future in which the choices to be faced cannot be anticipated by the wisest among us." (Moody and Matthews, p. 233) Little did President Kennedy know how true the words were when he spoke them. Since the 1960's we have seen many changes, especially in this last decade. Changes have occurred in systems, in procedures, in attitudes, and in equipment. (Devine and Tobin, p. 7)

This new era of information processing has emerged from data and word processing and has become a part of a totally integrated communications network. According to the Policies Commission for Business and Economic Education, 1983, information processing has been defined "a collection of word and data processing equipment, procedures, software, data and people that integrates the subsystems of the organization and provides information for the user."

The information processing system has developed into one of the largest growing areas of employment. The United States Bureau of Labor has stated that more than 685,000 office jobs will be available between 1980 and 1990. By 1990, approximately 75 percent of the total work force will be employed in information-type jobs. (Devine and Tobin, p. 7)

No matter which office we are referring to, the traditional or manual, or the electronic office, information passes through five phases: "input, processing, output, distribution/feedback,

and storage/retrieval." (Fruehling, p. 5) To illustrate the differences between the offices, an example was used of an executive who was notifying 25 branch managers by memorandum of a meeting two weeks hence and giving each of them an assignment to prepare for it. (Fruehling, p. 5)

"In the traditional office, the input phase takes 10 minutes. The processing, output and storage phases together take 6 - 8 hours." (Fruehling, p. 5) Distribution to the branch managers would take 2 to 5 days.

Using a standalone word processor, a secretary would produce those 25 memos in the example in about two hours rather than the 6 - 8 hours. The input phase would still take 10 minutes. Distribution would still take the same 2 to 5 days in a manual, or traditional, office. (Fruehling, p. 6)

The electronic office encompasses a "completely integrated system which enables data to be communicated or 'networked' throughout the business organization." (Fruehling, p. 6) If we could think of a business as made up of many departments or sub-systems, we could visualize how "these sub-systems interface, facilitating the communication of great volumes of data." (Fruehling, p. 6) When word processing and data processing have truly merged, then networking of communications can be accomplished. This may be done by the "use of a variety of communication devices, one such device being a modem." (Fruehling, p. 6)

In the fully integrated electronic office, the input would still take 10 minutes of dictation and shorthand notes. The

processing and output would still take a minimum of time because of the "paperless" concept. The distribution phase would show a marked decrease. "The executive's secretary could send the memos instantaneously!" Different information forms may also be transmitted; namely, text, data, voice, and graphics. (Modern Office Procedures, p. 38)

"The information needs of an organization's sub-systems will determine what equipment they use, how they will use it, and how it is linked to other equipment in the greater system." (Fruehling, p. 9) The concept of the task driving the technology would account for great increases in the amount of productivity in business. These ideas are realized, or only partly realized, in very few businesses around the world. The fully integrated information processing system remains the office of the future. (Fruehling, p. 9)

The author of Megatrends, John Naisbitt, stated that we live in the age of the parentheses--with one foot in the past and one foot in the future. How long can we maintain this position?

Findings in the Study

The purpose of this study was to construct an instrument which would determine the attitudes which selected business employers have toward the changing role of the office from the traditional office to the electronic office. Information was gathered from the responses that the business employers indicated on the questionnaires. (Tabulation of the data is reported in TABLE I.)

Procedures

The ten business employers who responded to the questionnaire were people selected randomly from industry in Northwest Arkansas. There were seven categories of industry identified:

1. Construction
2. Manufacturing
3. Transportation and Public Utilities
4. Wholesale and Retail Trade
5. Finance, Insurance and Real Estate
6. Services (Educational and Health)
7. Government

At least one business employer from each of the seven categories in industry was selected. The participants were selected regardless of their position as to the changing role of the office from the traditional office to the electronic office.

TABLE I

Tabulation of Responses to Questionnaire

	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
1. A wide range of differences exist between the traditional office and the electronic office.		10			
2. Duties in the traditional office are being replaced with duties demanded in the electronic office.		9	1		
3. Nonproductive time exists in the traditional office.	1	6	2		
4. Keyboarding is a necessary skill in the electronic office.	5	5			
5. The electronic office demands extensive training for secretaries	1	7	2		
6. A time/cost factor exists between the traditional office and the electronic office.	2	6	2		
7. The standard typewriter does not produce a professional copy.	4	5	1		
8. The electric typewriter produces a clear, sharp professional letter quality product.	3	7			

TABLE I

Continued

Tabulation of Responses to Questionnaire

		Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
9.	Corrections made on the memory typewriter are time-consuming and costly.		1	5	3	1
10.	The word processor makes editing more efficient.	4	6			
11.	The micro-computer with word processor capabilities can accomplish word processing efficiently.	1	8			1
12.	Typewriters with self-correcting devices are necessary.	2	8			
13.	The electronic office will demand greater proficiency in the language arts; i.e., grammar, spelling, punctuation.	1	5	4		
14.	The electronic office will free secretaries for more supervisory duties.	1	7	2		
15.	The microcomputer will decrease the need for more secretaries.	1	7	1	1	
16.	Secretaries who are computer efficient will demand higher wages.	1	9			
17.	The electronic office is the most cost efficient.	2	6	1		1

TABLE I

Continued

Tabulation of Responses to Questionnaire

		Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
18.	In the electronic office, typing skills will demand virtually error-free typing.	1	8	1		
19.	A secretary who possesses shorthand skills is more proficient in language arts skills.		4	3		3
20.	A person who is not computer literate will soon be at a disadvantage by the end of this decade.	5	5			

Findings From Business Employers

Question #1 All of the respondents to question #1 were positive. All of the respondents stated they Agreed that a wide range of differences existed between the traditional office and the electronic office.

Question #2 The majority, 90 percent, of the respondents to question #2 indicated that they Agreed that duties in the traditional office are being replaced with duties demanded in the electronic office. Ten percent of the participants Disagreed with the statement.

Question #3 A wide distribution of opinion existed with question #3. Seventy percent of the respondents responded positively to this question. Ten percent of the respondents indicated they Strongly Agreed that nonproductive time existed in the traditional office. Sixty percent of the participants indicated they Agreed that nonproductive time existed in the traditional office. Twenty percent responded that they Disagreed with the statement. Ten percent responded with No Opinion to the statement.

Question #4 Keyboarding received a high response. Fifty percent of the participants Strongly Agreed that keyboarding is a necessary skill in the electronic office. Fifty percent of the business employers responded that they Agreed that keyboarding is a necessary skill in the electronic office.

Question #5 Question #5 received a variety of responses. Eighty percent of the participants gave a positive response. Ten percent of the business employers Strongly Agreed that the

electronic office demanded extensive training for secretaries. Seventy percent of the participants responded that they Agreed that the electronic office demanded extensive training for secretaries. Twenty percent Disagreed with the statement.

Question #6 Eighty percent of the responses to question #6 were positive. Of this group 20 percent responded they Strongly Agreed that a time/cost factor existed between the traditional office and the electronic office. The other 60 percent stated they Agreed to the statement. Twenty percent of the respondents indicated they Disagreed that a time/cost factor existed between the traditional office and the electronic office.

Question #7 Ninety percent of the participants gave question #7 a favorable response. Forty percent of the participants Strongly Agreed and 50 percent of the participants Agreed that the standard typewriter does not produce a professional copy. Ten percent of the respondents indicated they Disagreed with the statement.

Question #8 All of the responses to question #8 were favorable. A score of 30 percent was recorded that the respondents Strongly Agreed that the electric typewriter produced a clear, sharp professional letter quality product. A score of 70 percent was recorded that the respondents Agreed to this same fact.

Question #9 There were divided opinions as to the responses to question #9. Eighty percent of the responses were negative to this statement. Fifty percent of the

respondents in this group indicated they Disagreed that corrections made on the memory typewriter are time-consuming and costly. Thirty percent of the respondents indicated that they Strongly Disagreed with the statement. Ten percent of the respondents indicated they Agreed that corrections made on the memory typewriter are time-consuming and costly. Ten percent of the respondents gave No Opinion as their response.

Question #10 The answers to question #10 were all positive. All of the business employers indicated that the word processor makes editing more efficient. Forty percent of the participants responded that they Strongly Agreed with the statement. Sixty percent of the participants indicated that they Agreed with the statement.

Question #11 Question #11 received a wide variety of responses. Ninety percent of the responses were positive to the fact that the microcomputer with word processor capabilities can accomplish word processing efficiently. Ten percent of the respondents indicated they Strongly Agreed; 80 percent indicated they Agreed with the statement. Ten percent of the respondents indicated No Opinion to this question.

Question #12 All of the responses to question #12 were positive. The majority, 80 percent, of the participants indicated they Agreed with the statement that typewriters with self-correcting devices are necessary. Twenty percent of the participants gave a higher rating and stated they Strongly Agreed with this statement.

Question #13 Differences of opinion existed with question #13. The majority, 60 percent, of the respondents gave question #13 a positive answer. Ten percent of this group of respondents indicated they Strongly Agreed that the electronic office will demand greater proficiency in the language arts; i.e., grammar, spelling, and punctuation. Fifty percent of the respondents Agreed with the statement. Another viewpoint existed. Forty percent of the respondents indicated they Disagreed that the electronic office will demand greater proficiency in the language arts.

Question #14 The majority, 80 percent, of the responses were positive to question #14. Seventy percent of the responses indicated they Agreed that the electronic office will free secretaries for more supervisory duties. Ten percent of the responses Strongly Agreed with the statement; 20 percent of the responses Disagreed with the statement.

Question #15 Question #15 received a variety of responses. The majority, 80 percent, of the respondents indicated positively to the statement that the microcomputer will decrease the need for more secretaries. Seventy percent of the participants indicated they Agreed with the statement; ten percent Strongly Agreed with the statement. Ten percent of the participants Disagreed with the statement. Ten percent of the participants Strongly Disagreed with the statement.

Question #16 All of the business employers stated they viewed question #16 favorably. Ninety percent of the business employers indicated that they Agreed that secretaries who are

computer efficient will demand higher wages. Ten percent of the business employers indicated they Strongly Agreed with this premise.

Question #17 Question #17 received a variety of responses. The majority, 80 percent, of the participants indicated a favorable response. Twenty percent of the participants indicated they Strongly Agreed that the electronic office is the most cost efficient. Sixty percent of the participants indicated they Agreed with the above statement. Ten percent of the respondents indicated they Disagreed with this statement. Ten percent of the respondents stated they had No Opinion on this question.

Question #18 Ninety percent of the respondents indicated they believed question #18 to be true. Eighty percent of the respondents stated they Agreed that in the electronic office, typing skills will demand virtually error-free typing.

Ten percent of the respondents stated they Strongly Agreed with this statement. Ten percent of the participants Disagreed with this statement.

Question #19 Forty percent of the responses indicated they Agreed to question #19. Thirty percent of the participants indicated they Disagreed that a secretary who possesses shorthand skills is more proficient in language arts skills. Thirty percent of the participants expressed No Opinion to question #19.

Question #20 All of the business employers demonstrated favorably that a person who is not computer literate will soon be at a disadvantage by the end of this decade. Fifty percent indicate they Strongly Agreed with this statement; 50 percent Agreed with this statement.

Summary, Conclusions, and Recommendations

Summary

The purpose of this study was to construct an instrument which would determine the attitudes which selected business employers had toward the changing role of the office from the traditional office to the electronic office. Information was secured from the individual responses that the business employers indicated on the questionnaire.

The population for the study was selected from business employers in Northwest Arkansas. Ten business employers were selected randomly from industry. There were seven categories of industry identified:

1. Construction
2. Manufacturing
3. Transportation and Public Utilities
4. Wholesale and Retail Trade
5. Finance, Insurance and Real Estate
6. Services
7. Government

At least one business employer from each of the categories in industry was selected. All of the participants were aware of the nature of the study. All of the information received from the respondents was similar in content. Differences of opinion among employers were thought to be a result of the sizes and types of business firms.

Conclusions

From the similarity of responses, one might infer that each of the business employers had experience in the electronic office and could, therefore, relate to the resulting changes in people, equipment, procedures, and attitudes. It is also concluded that the electronic office is capable of requiring less time to do a certain task with the least amount of expense, thereby being most cost efficient. A number of differences exist between the traditional office and the electronic office.

The changing role of the secretary has received much attention. Secretaries will have more free time, time that can be spent in supervisory duties. The increased use of microcomputers will decrease the need for more secretaries, resulting in secretaries demanding higher wages for being computer efficient. The microcomputer with word processor capabilities can accomplish word processing efficiently, even without expensive equipment. Many of the duties of the secretary are in a period of transition. Some of the traditional duties remain the same, but with the introduction of the new equipment in the electronic office, the role of the secretary is changing to include the role of a supervisor. One participant responded that the duties were "lessened rather than replaced." The question of shorthand skills was almost divided equally into three opinions. The majority of the responses indicated they agreed that a secretary who possessed shorthand skills is more proficient in language arts skills. The emphasis on shorthand skills has been declining in the past

few years and would account for the participants who disagreed or had no opinion on question #19.

The majority of the opinions stressed the fact that nonproductive time existed in the traditional office. Comments from participants revealed some underlying thoughts. One participant stated, "non-productive time can exist in any type office." Another participant stated, "electronic office may produce more nonproductive time."

With the high percentage of response from business employers relating to keyboarding, it would conclude that keyboarding needs to be taught by business educators so that students may be adequately prepared to enter the world of work.

The majority of the opinions indicated that the electronic office demanded extensive training for secretaries. One participant questioned "extensive" training. Pertaining to the need for more extensive training, another participant commented, "more so than earlier."

The standard typewriter has served its purpose well, but for a clear, sharp professional letter quality product, the vote seems to go for an electric typewriter. Typing skills in the electronic office will need to be virtually error-free to avoid the costly correction cycle. As one respondent stated "errors are more easily corrected." Another respondent stated "can make corrections fast so the finished product is error-free."

The responses to question #9 would indicate that corrections made on the memory typewriter are not time-consuming and costly. Audrey Schmidt Rubin quoted from a manager of a

word processing center and stated, "The absence of good typing skills is one of the major problems in any word processing center. Typewriting accuracy is absolutely essential, because manipulating the memory (making corrections on a memory typewriter) is time-consuming and costly." (Rubin, p. 12)

There was consensus of opinion regarding correction devices. Correction devices may not be totally necessary, but they save time and are more efficient. One participant commented, "not necessarily but saves time." Another participant similarly stated, "saves labor." Another participant stated, "not necessary--but certainly more efficient."

The majority of the opinions stated that the electronic office will demand greater efficiency in the language arts; i.e., grammar, spelling, punctuation, capitalization, editing, and proofreading. The 40 percent who disagreed with the statement have access to typewriters that have spelling, word-division, and grammar capabilities. One participant commented, "some equipment provides for deficiencies in these areas." Another participant commented, "There has been a great deal of software already developed and being developed which is designed to compensate for the language arts deficiencies." Another participant commented, "Regular typewriters--can't make mistakes. But with new ones, see what you have typed and we have some that can check the spelling."

The universal opinion in the mid 1980's seems to be that a person who is not computer literate will be at a disadvantage by the end of this decade. The matter of computer literacy may divide our population. It behooves business educators to prepare their students for the new technological age.

Recommendations

Recommendations drawn from this study are

(1) That the sample for the study be expanded to include larger businesses.

(2) That the study be made to include a greater graphic area.

(3) That the population of the study be increased.

(4) That further study be made concerning the discrepancies between what the literature stated and the employers stated concerning the statement that corrections made on the memory typewriter are time-consuming and costly.

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APPENDIX

The Traditional Office versus The Electronic Office

In what area of industry is your firm engaged?

_____Construction

_____Manufacturing

_____Transportation and Public Utilities

_____Wholesale and Retail Trade

_____Finance, Insurance, and Real Estate

_____Services (Educational and Health)

_____Government

Which of the following equipment do you need in your office at the present time?

_____Electric typewriter

_____Memory typewriter

_____Word processor

_____Microcomputer with word processor capabilities

_____Other (Be Specific)

Which of the following electronic equipment will you be needing in your office by 1990?

_____Electric typewriter

_____Memory typewriter

_____Word processor

_____Microcomputer with word processor capabilities

_____Other (Be specific)

Which of the following electronic equipment will you be purchasing for your office by 1990?

_____Electric typewriter

_____Memory typewriter

_____Word Processor

_____Microcomputer with word processor capabilities

_____Other (Be specific)

Please circle the one answer you feel is most appropriate:

SA = Strongly Agree A = Agree DA = Disagree SD = Strongly Disagree

No = No Opinion

Include comments when desired.

	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
1. A wide range of differences exist between the traditional office and the electronic office	SA	A	D	SD	NO
Comments: _____					
2. Duties in the traditional office are being replaced with duties demanded in the electronic office.	SA	A	D	SD	NO
Comments: _____					
3. Nonproductive time exists in the tradtional office.	SA	A	D	SD	NO
Comments: _____					
4. Keyboarding is a necessary skill in the electronic office.	SA	A	D	SD	NO
Comments: _____					
5. The electronic office demands extensive training for secretaries.	SA	A	D	SD	NO
Comments: _____					

	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
6. A time/cost factor exists between the traditional office and the electronic office.	SA	A	D	SD	NO
Comments: _____					
7. The standard typewriter does not produce a professional copy.	SA	A	D	SD	NO
Comments: _____					
8. The electric typewriter produces a clear, sharp professional letter quality product.	SA	A	D	SD	NO
Comments: _____					
9. Corrections made on the memory typewriter are time-consuming and costly.	SA	A	D	SD	NO
Comments: _____					
10. The word processor makes editing more efficient.	SA	A	D	SD	NO
Comments: _____					
11. The micro-computer with word processor capabilities can accomplish word processing efficiently.	SA	A	D	SD	NO
Comments: _____					

		Strongly Agree	Agree	Disagree	Disagree	Opinion
12.	Typewriters with self-correcting devices are necessary.	SA	A	D	SD	NO
	Comments: _____					
13.	The electronic office will demand greater proficiency in the language arts; i.e., grammar, spelling, punctuation.	SA	A	D	SD	NO
	Comments: _____					
14.	The electronic office will free secretaries for more supervisory duties.	SA	A	D	SD	NO
	Comments: _____					
15.	The microcomputer will decrease the need for more secretaries.	SA	A	D	SD	NO
16.	Secretaries who are computer efficient will demand higher wages.	SA	A	D	SD	NO
	Comments: _____					
17.	The electronic office is the most cost efficient.	SA	A	D	SD	NO
	Comments: _____					
18.	In the electronic office, typing skills will demand virtually error-free typing.	SA	A	D	SD	NO
	Comments: _____					

	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opionion
19. A secretary who possesses shorthand skills is more proficient in language arts skills.	SA	A	D	SD	NO
Comments: _____					
20. A person who is not computer literate will soon be at a disadvantage by the end of this decade.	SA	A	D	SD	NO
Comments: _____					